

METHODS, COMPOSITIONS AND DEVICES
FOR GROWING HEMATOPOIETICS CELLS

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ABSTRACT OF THE DISCLOSURE

Methods, compositions and devices are provided for the growth of hematopoietic cells in culture. Bioreactors are provided in which diverse cell types are simultaneously cultured in the presence of appropriate levels of nutrients and growth factors substantially continuously maintained in the bioreactor while removing undesirable metabolic products. This simultaneous culture of multiple cell types is required for the successful reconstruction of hematopoietic tissue ex vivo. At least one growth factor is provided through excretion by transfected stromal cells, particularly heterologous cells. Means are provided for maintaining the stromal cells and hematopoietic cells separately, to allow for early removal of the hematopoietic cells.

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